

### **Remarks**

In the Office Action mailed March 11, 2005, the Examiner maintained his objection to the specification because the amendment filed on February 27, 2004 allegedly introduced new matter into the specification. Claims 2-8 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness, and claims 2-12, 15-20 and 43 were rejected under § 112, first paragraph, for lack of enablement. Claims 2-12, 15-20, 42 and 43 were rejected under 35 U.S.C. § 103(a) as obvious over Schoonjans *et al.*, in view of Hansen *et al.* (1), Lindhofer *et al.*, Qu *et al.*, Hansen *et al.* (2), and Gautherot *et al.* and claims 2-3, 5-12, 15-18, 42 and 43 were rejected as obvious over Harris *et al.*, in view of Chaudhary *et al.*, Hansen *et al.* (1), Qu *et al.*, Hansen *et al.* (2), and Gautherot *et al.* The specific grounds for objection, and Applicant's response thereto, are set out in detail below.

Applicant acknowledges the withdrawal of the rejections of claims 5, 7 and 8 under 35 U.S.C. § 112, second paragraph; claims 5, 7 and 8 under 35 U.S.C. § 112, first paragraph; claims 1-12 and 15-20 under 35 U.S.C. § 103(a) over Schoonjans in view of Hansen and Lindhofer; and claims 1-2, 9-10 and 11-18 35 U.S.C. § 103(a) over Harris in view of Chaudhary and Hansen.

Claims 2-12, 15-20, 42 and 43 are canceled herein and claims 44 to 48 have been added. No new matter is added with the amendments, which are fully supported by the specification. Support for claims 44 to 48 is found in the as filed specification as follows. Support for claim 44 is found at page 6, lines 14 to 19, page 14, lines 1 to 18, and in the Figures; claim 45 is supported at page 4, lines 1 to 6, claim 46 is supported at page 15, line 21, claim 47 is supported at page 4, lines 9 and 10, and claim 48 is supported at page 15, lines 10 and 11.

### **Objection to Specification**

The Examiner has maintained his objection to the specification because the amendment filed on February 27, 2004 allegedly introduced new matter into the specification. In response, Applicant has amended the specification as suggested by the Examiner.

### **Rejection under § 112, first paragraph**

Claims 2-12, 15-20 and 43 are rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement, because the specification allegedly does not provide evidence that the claimed

biological materials are (1) known and readily available to the public or (2) reproducible from the written description. Applicant respectfully traverses.

Applicant submits that one skilled in the art would readily be able to determine and generate the target binding proteins encompassed by claims 2-12, 15-20 and 43 by employing no more than routine experimentation. Nevertheless, without acquiescing in the propriety of the rejection, Applicant has canceled claims 2-12, 15-20 and 43 and added claims 44-48. Applicant submits that one skilled in the art readily could prepare the proteins defined by claims 44-48 and that the claims are fully enabled by the specification of the instant application. As such, withdrawal of the rejection respectfully is requested.

#### **Rejection under § 112, second paragraph**

Claims 2-8 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. Applicant respectfully traverses.

Applicant submits that one skilled in the art would fully appreciate Applicant's claimed invention. Nevertheless, without acquiescing in the propriety of the rejection, Applicant has canceled claims 2-8 and added claims 44-48. Applicant respectfully submits that claims 44-48 fully comply with 35 U.S.C. § 112, second paragraph.

Additionally, the Examiner has taken issue with the alleged lack of antecedent basis for the phrase "said first immunoglobulin-like domain", in claims 2, 5-6 and "said second immunoglobulin-like domain" in claims 42 or 43 (or 2, 3, 5). Applicant submits that the cancellation of claims 2-8 renders this rejection moot.

#### **Rejection under § 103(a)**

Claims 2-12, 15-20, 42 and 43 are rejected under 35 U.S.C. § 103 as obvious over Schoonjans *et al.*, in view of Hansen *et al.* (1), Lindhofer *et al.*, Qu *et al.*, Hansen *et al.* (2), and Gautherot *et al.* Claims 2-3, 5-12, 15-18, 42 and 43 are rejected as obvious over Harris *et al.*, in view of Chaudhary *et al.*, Hansen *et al.* (1), Qu *et al.*, Hansen *et al.* (2), and Gautherot *et al.* Applicant respectfully traverses.

Claims 2-12, 15-20, 42 and 43 have been canceled, thereby rendering the rejection moot as it applies to those claims. To the extent that the Examiner seeks to apply the rejection to newly added claims 44-48, Applicants respectfully traverse.

All claims are presumed initially to be non-obvious. A *prima facie* case of obviousness requires three elements: (1) a teaching or suggestion of all of the claim limitations; (2) a suggestion or motivation to modify or combine the teachings of the applied prior art; and (3) a reasonable expectation of success in reaching the claimed invention. The Examiner bears the initial burden of supporting any *prima facie* assertion of obviousness with adequate facts. MPEP § 2142 (Feb. 2000).

Here, none of the cited references, either alone or in combination, disclose all the elements of claim 44. Accordingly, the first element of a *prima facie* case of obviousness cannot be satisfied.

More particularly, as noted by the Examiner, Schoonjans teaches scFv molecules conjugated through a CL or CH1 by a linker to a VH or VL and a second polypeptide comprising a scFv and a CL or CH1 and a VL or VH, and that the molecules have a disulfide bond in the extra amino acid sequence, which is in the constant region. Applicant points out that in the Schoonjans scaffold the CL of the light chain of the Fab is joined by a covalent S-S bond to the CH1 of the heavy chain. By contrast, in Applicant's scaffold the CL of the light chain of the Fab is joined by a covalent S-S bond to a linker between the heavy chain of the Fab and the scFv (see claim 44). Schoonjans fails to teach or suggest any alternative scaffold, let alone Applicant's claimed composition. Furthermore, the Schoonjans scaffold utilizes a CH1 from murine IgG2b, while Applicant's scaffold utilizes a CH1 from human IgG1 (see claim 44). Finally, the secondary references of Hansen (1), Lindhofer, Qu, Hansen (2), Gautherot., Harris, or Chaudhary fail to remedy the missing elements of Schoonjans. Accordingly, even when the Schoonjans is considered in combination with one or more of the secondary references the first element of a *prima facie* case of obviousness cannot be satisfied. As such, withdrawal of the rejection respectfully is requested.

### CONCLUSION

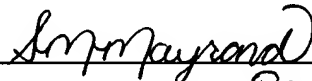

In view of the above remarks and amendments, it is respectfully submitted that this application is in condition for allowance. Early notice to that effect is earnestly solicited. The Examiner is invited to telephone the undersigned at the number listed below if the Examiner believes such would be helpful in advancing the application to issue.

If any additional fees are required for the filing of this paper, Applicant authorizes the Commissioner to charge any deficiency to Deposit Account No. 08-1641.

Respectfully submitted,

Date: August 11, 2005

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